



MERRY-GO-ROUND FOR HEALING

Dr. S. J. Hawley, of Geisinger Memorial Hospital, Danville, Pa., is demonstrating for physicians at the American Medical Association meeting his new turntable for preventing X-ray burns during cancer treatment.

MEDICINE

Gunshot Wounds Mortality Remains at World War Level

Increase of a Fifth in Velocity of Bullet Recently Makes It Cause Much More Damage to Abdominal Organs

MEN SHOT in the abdomen have no better chance of surviving today than they had during the first World War, despite improvements in the surgeon's technic.

Higher powered ammunition in use today is the reason, Dr. Elkin L. Rippey, Nashville, Tenn., surgeon, declared at the meeting of the American Medical Association in New York City.

Army surgeons will find blood banks more valuable than X-ray machines for handling such wounds, he suggested. Taking time for X-rays to locate the bullet probably does more harm than good because of the delay involved. Blood transfusions are especially valuable because the greatest single factor in death from gunshot wounds is the amount of blood lost. Of 112 injured who had severe hemorrhages, 83% died.

Gunshot wounds of the abdomen remain the most effective method of killing, he has found. Although his studies were made in peace, he reminded fellow surgeons they may soon be faced with the job of caring for gunshot wounds of war "since at the present time over half the world is engaged in war and the peace of the rest of the world hangs by a thread."

An increase of 20% in the velocity of the bullet in the past 25 years makes it cause more damage to abdominal organs, he said. The smaller the caliber of the rifle or pistol, the lower the mortality, Dr. Rippey found from investigating 292 cases of gunshot wounds of the abdomen occurring in Nashville between 1923 and 1939. Most of the shotgun cases were attempted murder, with guns shot at close range and tearing holes so large it was

almost impossible to repair the damage.

The increased velocity of modern bullets which causes so much damage is beyond the control of the surgeon, but Dr. Rippey pointed out five factors making for the recovery of the wounded which the surgeon can control. These are: Prompt operation—the earlier the victim is operated on the greater his chance for recovery; choice of anesthetic; operative technic; length of time taken for the operation; and care before and after operation.

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Turntable for Cancer

PATIENTS suffering from cancers deep within their bodies are expected to be helped by a turntable apparatus devised by Dr. S. J. Hawley, of the Geisinger Memorial Hospital, Danville, Pa.

While X-rays are being used to destroy the cancer, the patient lies on a turntable which rotates him during the treatment. The X-ray beam is aimed directly at the cancer, but the rotation of the patient causes the beam to spread over the large skin area which continually moves in the beam. This avoids damage to the skin without sacrificing cancer-destroying dosage of the X-rays. Before invention of the turntable device, physicians tried to avoid skin damage by aiming two, three, four or more X-ray beams at the cancer through separate areas of the skin.

Science News Letter, June 22, 1940

Human Teeth Can Kill

HUMAN teeth may not rate with bombs and guns as lethal weapons, but they can be used to kill a man or woman. Serious injuries and one death in 56 cases of bites inflicted by human teeth were reported by Dr. Frank F. Boland, Emory University School of Medicine, Atlanta.

The danger of death from the human bite is especially great if the fingers and hands are attacked. Reasons for this are: First, virulent germs found in the mouth infect the apparently trivial wound. Once the skin is broken, the infection is rapidly conveyed along the muscles and tendons. This is worse if the hand has been clenched; when the muscles relax they carry the germs deep into the tissues. Third, the joints and tissues are so complicated that it is difficult to free them from the infection once it has entered.

"The fellow who carried brass knuckles was wiser than he knew," Dr. Boland commented, since one way to get a fatal

bite is to push one's clenched fist into the mouth of another in a fight.

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Eye Used by Four

AN EYE that has been transplanted three times, serving as a seeing organ in four separate individuals, was on display at the meeting of the American Medical Association. The eye belonged originally to a salamander. It is part of an investigation on causes of blindness being carried on by Dr. L. S. Stone and Dr. Frederick A. Wies, of Yale University School of Medicine. When the eye is transplanted, the seeing part, which is the retina, at first degenerates almost completely.

Between two and three months later, however, a new retina has formed and grown nerve connections to the brain. Not only can one eye be transplanted completely from one salamander to another, but eyes can be exchanged between animals of different species, without loss of eyesight.

Chances of transplanting an entire eye in man are remote because, for one thing, no one would want to sacrifice a good eye for the sake of the experiment. In rats, which are much closer to man than salamanders are, complete transplantation of eyes has not succeeded. The eye has healed and developed a blood supply following the transplantation, but vision has not returned.

The pin-point eye of a half-inch-long, pearly pink baby opossum may give doctors knowledge of the cause, and then, possibly, of how to prevent, cataracts in children. Dr. Stone had just started this part of the study. The baby 'possum was chosen because at birth it has an eye in the same stage of development as the human eye five weeks after the human baby starts to form in its mother's body. It is at this stage, doctors believe, that the damage which results in cataract occurs to the eye lens. Dr. Stone is trying now to find what conditions cause such damage.

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Coins less than a fifth of an inch in diameter were among those used in India more than 2,200 years ago.

The Pacific entrance to the *Panama Canal* is 27 miles farther east than the Atlantic entrance.

One person in ten in this country has some *speech defect* or voice abnormality, says a physician.

AERONAUTICS

What Army and Navy Planes Are Being Furnished Allies

Although Navy Was First To Release Planes, Army Is Likely To Trade in the Largest Number

A WIDE variety of Army and Navy warbirds is now available to the Allies under the administration's new trade-policy, it was agreed in aviation circles, though opinions differed on how far Allied needs would be allowed to go in stripping the American air services.

Here are thumbnails of Army and Navy favorites which no one dreamed a year ago would ever engage in anything more deadly than mock combat with cameras for guns:

Curtiss SBC-4, the famous Navy "hell-diver" of which 50 have been ordered back to the manufacturer in Buffalo. It is a scout bomber, top speed about 270 miles an hour, dive-bombing specialist and therefore useful for ground attack. Full data have not been released by the Navy. The 50 already released were land-based for the use of reserve pilots. Scores more are on duty aboard the Navy's carriers.

Vought SB2U-1, a monoplane Navy scout bomber. Forty of an almost exactly similar model, the V-156, were delivered to France last winter. The Navy has dozens of these aboard carriers: two squadrons of 18 each on each carrier. France has a new carrier which has not yet been equipped with planes. Unlike the helldiver, however, few Voughts, if any, are on reserve duty. Top speed of the V-156, 259 m.p.h.

Curtiss P-36, the Army's standard pursuit plane. Hundreds have been in action in France since the start of the war and have proved extremely successful against the famed Messerschmitt 109, despite the fact they are not quite as fast. The French P-36 has been altered by mounting six instead of two machine guns and the installation of armor. Top speed of the Army's Cyclone-powered machine, just over 300 miles an hour; top speed of the twin-wasp-engined French plane 315—but the French systematically overrun the motor. Engine failure is not most important risk that a pilot at war takes.

Douglas B-18 bombers: military versions of the ubiquitous DC-3, 21-passenger airliner. The Army has more than 200. They are slow, 225 miles an hour, partly because speed was sacrificed to

range. The Army has already begun replacing them with 290-mile-an-hour Douglas B-26 and Martin B-23 heavy twin-engined bombers. Canada already has about twenty B-18s for coastal patrol work. If the Allies want B-18s it is a good bet they will be released.

Douglas Northrop A-17 attack planes: 250-mile-an-hour hedgehoppers built for attacking troops. They are obsolete and are to be replaced by North American and Douglas attack bombers, which have two engines and are bigger and much faster. The Army has a couple of hundred A-17s.

Grumman biplane fighters, of several different types: these are the deep-bellied squat planes you think of nine times out of ten when you think of Navy fighters. Top speeds, around 250 miles an hour; among the most maneuverable craft in the world. They are being replaced by Grumman and Brewster monoplanes which are much faster, but of which the Navy has few on hand.

Other models will probably be released but these are the most important.

Though the Navy was the first to actually release any planes, as was the case during the Russo-Finnish war, when 42 Brewster F2A-1 monoplane fighters on order were turned over to Finland, there is a likelihood that more Army planes than Navy will be traded in. The fleet's ship-borne aircraft and the patrol bombers of the scouting force are an important Naval element, and the fleet is still the first line of defense. If any American armed service ever sees action, a possibility which strategists cannot exclude even in days of calmest peace, it will be the Navy. Similar reasoning will probably also decide that among the Army squadrons the first to be stripped will be National Guard and reserve units and the last the powerful wings which guard the Canal Zone and Hawaii.

Many of the planes to be released to the Allies are obsolete or obsolescent. But they are at least as good as many actually in service on both sides of war zone. And one of the lessons of the war is that quantity is far more important than quality.

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